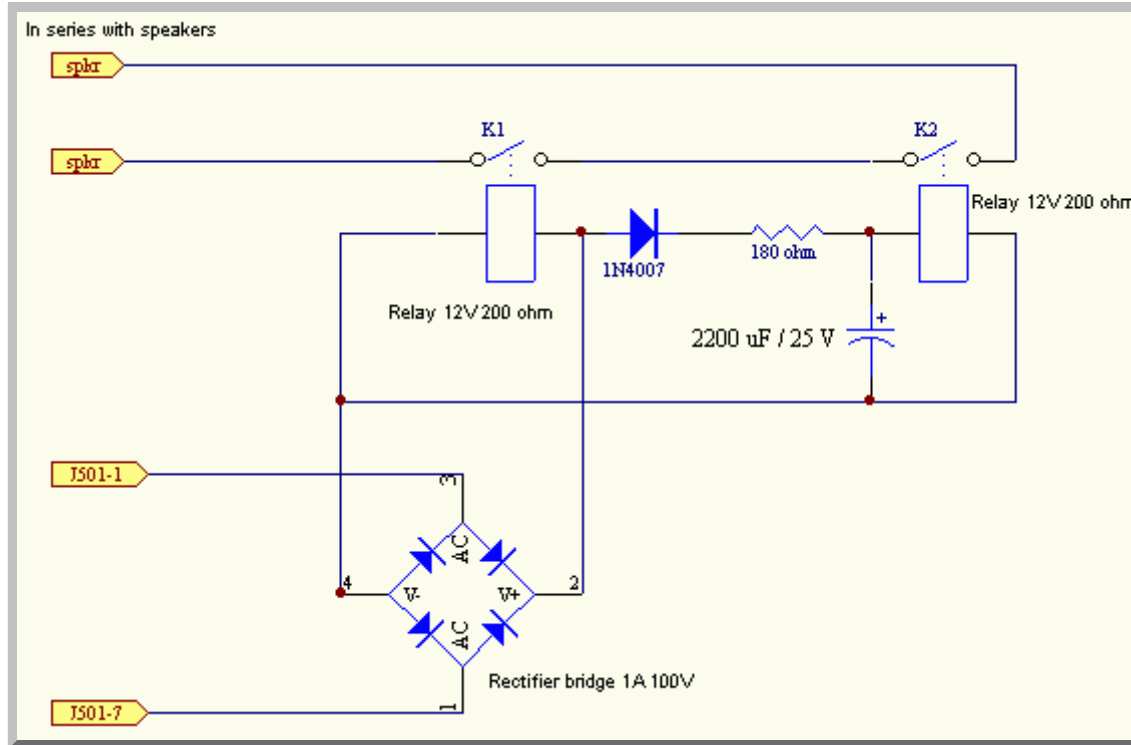


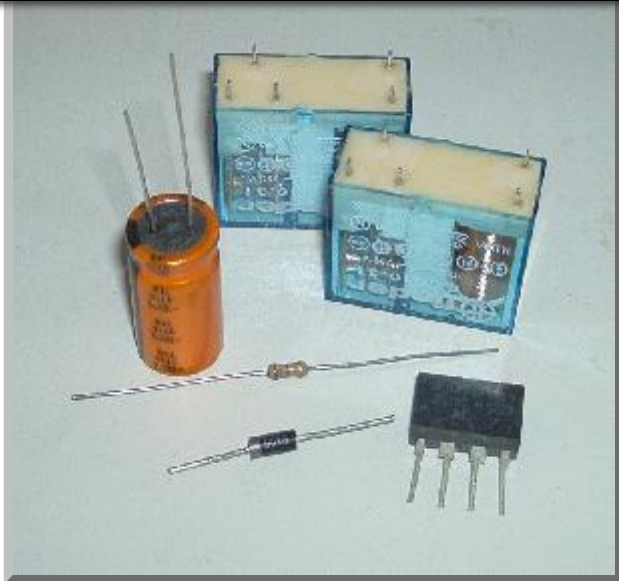
WPC sound board noise reducing

The great WPC system has an irritating feature for home use: There is a loud transient noise on the speaker at turnon/shutdown. This happens because the sound board amplifiers plus and minus voltages turn on and off at slightly different times. Don't worry - here's how to fix it!



Schematic diagram

This simple circuit removes extra noises totally. The relays K1 and K2 get their power from sound board power connector. Speakers are silenced until both relays pull in. K1 pulls in as soon as power is turned on, but K2 operates only after a few seconds, when the 2200 uF capacitor has charged via 180 ohm resistor. This prevents the startup noise. At turnoff, K1 drops out immediately disconnecting the speakers. The shutdown noise, appearing slightly later, does not reach the speakers. In WPC games, the speakers are series-connected, so it is easy to add relays to wire from connector J505 or to the single speaker connector in backbox speaker wire, near the sound board connector.



Here are the parts needed.

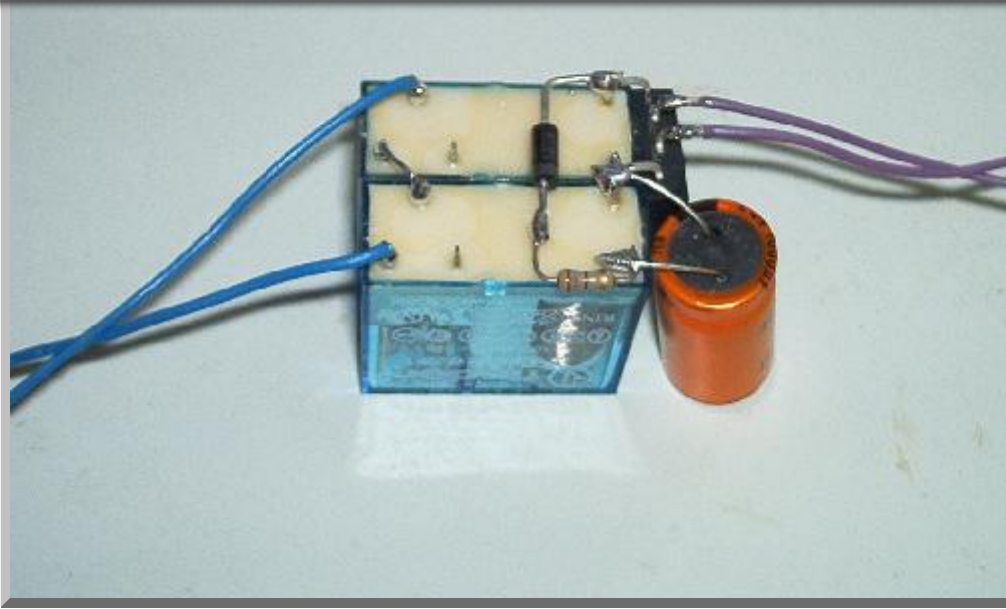
Parts list:

- 2 pcs. Relay 12 V, with at least one N.O. switch
- 1 pc. Rectifier bridge min. 100 V / 1 A
- 1 pc. Capacitor 2200 uF (or 4700 uF, better) / 25 V
- 1 pc. Diode 1N4007
- 1 pc. Resistor 180 ohm 1/2 W
- Some wire, tape etc.

If you go to Radio Shack for the parts, this part number list (thanks David!) will help:

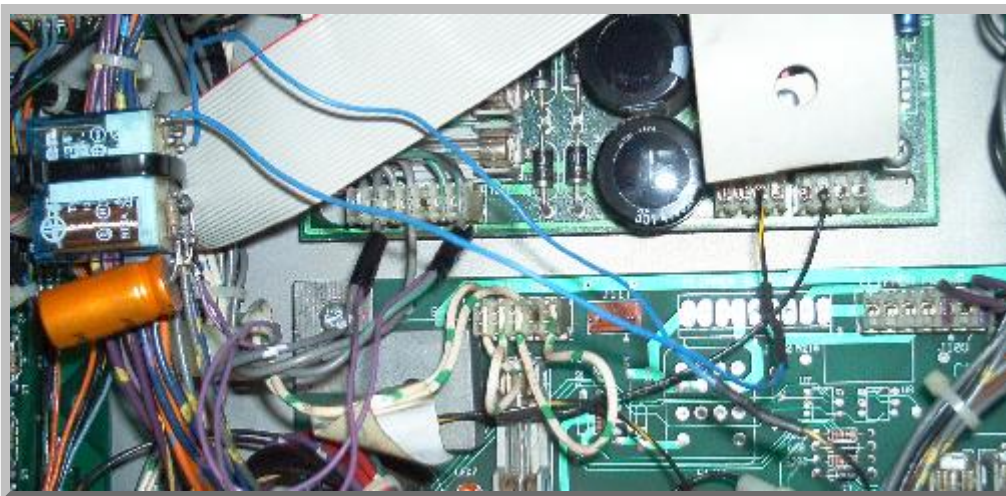
- 275-248A SPDT Miniature PC Relay 12VDC coil, Rated 10A at 120VAC
- 271-1111 220-Ohm Resistor, 1/2 watt
- 272-1020 2200uF Electrolytic Capacitor, 35WVDC
- 276-1102 1N4003 Micromini Silicon Diode, 200V, 1A
- 276-1152A Silicon Bridge Rectifier, 100VDC, 1.5A

Total cost \$15.69 (in Dec 2002)



This is what the ready device looks like.

The blue wires come from the series connected relay switches, and the purple ones are for powering the relays.



http://tuukan.fliput.net/nonoise_en.html

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electric tape over the wire joints!

Power to the relays is taken from sound card power connector J501 left and rightmost wires. It is wise to check before connecting relays that there is about 18 VAC at the wires. Of course keep power off when connecting the relays! The circuit can be mounted with a tie-wrap onto some cable bunch, or glued with heat melt glue to backbox wall. Enjoy your silenced game!

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